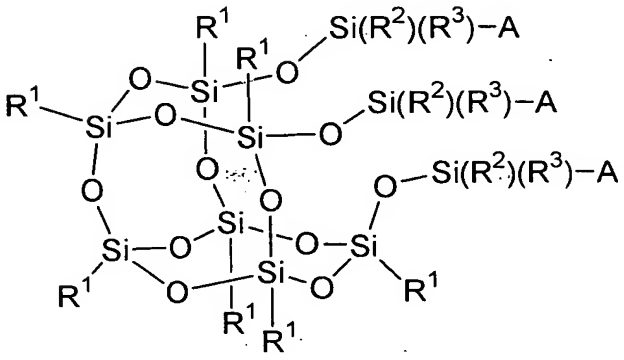
CLAIMS

1. A silicon compound represented by Formula (1):



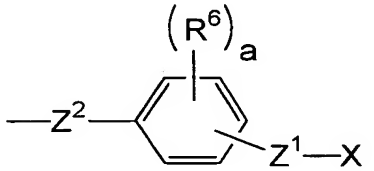
(1)

wherein respective R^1's are groups independently selected from hydrogen, alkyl having a carbon atom number of 1 to 40 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or cycloalkenylene, substituted or non-substituted aryl and arylalkyl constituted from a substituted or non-substituted aryl group and an alkylene group in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O- or -CH=CH-; R^2 and R^3 are groups independently selected from alkyl having a carbon atom number of 1 to 8, phenyl and cyclohexyl; and A is a group having a polymerization initiating ability for a monomer.

2. The silicon compound as described in claim 1, wherein respective R^1's are groups independently selected from hydrogen, alkyl having a carbon atom number of 1 to 40 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or cycloalkenylene, substituted or non-substituted aryl and arylalkyl constituted from a substituted or non-substituted aryl group and an alkylene group in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O- or -CH=CH-; R^2 and R^3 are groups independently selected from alkyl having a carbon atom number of 1 to 8, phenyl and cyclohexyl; and A is a group having a living radical polymerization initiating ability for a monomer.

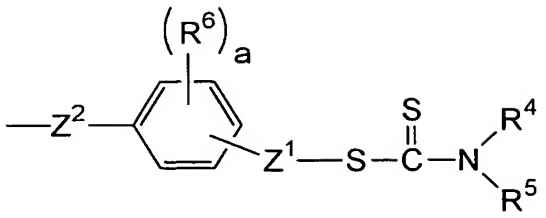
3. The silicon compound as described in claim 1, wherein respective R^1's are groups independently selected from hydrogen, alkyl having a carbon atom number of 1 to 40 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or cycloalkenylene, substituted or non-substituted aryl and arylalkyl constituted from a substituted or

non-substituted aryl group and an alkylene group in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with $-O-$ or $-CH=CH-$; R^2 and R^3 are groups independently selected from alkyl having a carbon atom number of 1 to 8, phenyl and cyclohexyl; and A is a group represented by any of Formula (2-1), Formula (2-2) and Formula (2-3):



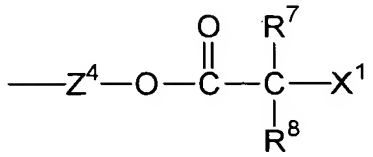
(2-1)

wherein Z^1 is alkylene having a carbon atom number of 1 to 3 in which optional $-CH_2-$ may be substituted with $-O-$; Z^2 is alkylene having a carbon atom number of 2 to 10 in which optional $-CH_2-$ may be substituted with $-O-$, $-COO-$ or $-OCO-$; R^6 is alkyl having a carbon atom number of 1 to 3; a is an integer of 0 to 2; X is halogen; and a bonding position of Z^1 on a benzene ring is a meta position or a para position to a bonding position of Z^2, and a bonding position of R^6 is an optional position excluding the respective bonding positions of Z^1 and Z^2;



(2-2)

wherein R^4 and R^5 are independently hydrogen, alkyl having a carbon atom number of 1 to 12, cycloalkyl having a carbon atom number of 5 to 10 or aryl having a carbon atom number of 6 to 10, and R^4 and R^5 may be combined with each other to form a ring together with N; Z^1 is alkylene having a carbon atom number of 1 to 3 in which optional $-CH_2-$ may be substituted with -O-; Z^2 is alkylene having a carbon atom number of 2 to 10 in which optional $-CH_2-$ may be substituted with -O-, -COO- or -OCO-; R^6 is alkyl having a carbon atom number of 1 to 3; a is an integer of 0 to 2; and a bonding position of Z^1 on a benzene ring is a meta position or a para position to a bonding position of Z^2, and a bonding position of R^6 is an optional position excluding the respective bonding positions of Z^1 and Z^2;



(2-3)

wherein Z^4 is alkylene having a carbon atom number of 2 to 20 or alkenylene having a carbon atom number of 3 to 8, and optional $-CH_2-$ in these alkylene and alkenylene may be substituted with -O-; R^7 is hydrogen, alkyl having a carbon atom number of 1 to 20, aryl having a carbon atom number of 6 to 20 or arylalkyl having a carbon atom number of 7 to 20; R^8 is alkyl having a carbon atom number of 1 to 20, aryl having a carbon atom number of 6 to 20 or arylalkyl having a carbon atom number of 7 to 20; and X^1 is halogen.

4. The silicon compound as described in claim 3, wherein respective R^1's are groups independently selected from hydrogen and alkyl having a carbon atom number of 1 to 30 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O- or cycloalkylene.

5. The silicon compound as described in claim 3, wherein respective R^1's are groups independently selected from alkenyl having a carbon atom number of 2 to 20 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$

may be substituted with -O- or cycloalkylene and alkyl having a carbon atom number of 1 to 20 in which optional hydrogens may be substituted with fluorine and in which at least one $-CH_2-$ is substituted with cycloalkenylene.

6. The silicon compound as described in claim 3, wherein respective R^1's are groups independently selected from phenyl in which optional hydrogens may be substituted with halogen or alkyl having a carbon atom number of 1 to 10 and non-substituted naphthyl; in alkyl which is a substituent of the phenyl, optional hydrogens may be substituted with fluorine, and optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or phenylene; and when the phenyl has plural substituents, the substituents may be the same group or different groups.

7. The silicon compound as described in claim 3, wherein respective R^1's are groups independently selected from phenylalkyl constituted from a phenyl group in which optional hydrogens may be substituted with halogen or alkyl having a carbon atom number of 1 to 12 and an alkylene group having a carbon atom number of 1 to 12 in which optional hydrogens may be

substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O- or -CH=CH-; in alkyl which is a substituent of the phenyl group, optional hydrogens may be substituted with fluorine, and optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or phenylene; and when the phenyl group has plural substituents, the substituents may be the same group or different groups.

8. The silicon compound as described in claim 3, wherein respective R^1's are groups independently selected from alkyl having a carbon atom number of 1 to 8 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or cycloalkenylene, phenyl in which optional hydrogens may be substituted with halogen, methyl or methoxy, non-substituted naphthyl and phenylalkyl constituted from a phenyl group in which optional hydrogens may be substituted with fluorine, alkyl having a carbon atom number of 1 to 4, vinyl or methoxy and an alkylene group having a carbon atom number of 1 to 8 in which optional $-CH_2-$ may be substituted with -O- or -CH=CH-; and when the phenyl or the phenyl group in the phenylalkyl has plural substituents, the

substituents may be the same group or different groups.

9. The silicon compound as described in claim 3, wherein all R^1's are the same group selected from alkyl having a carbon atom number of 1 to 8 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or cycloalkenylene, phenyl in which optional hydrogens may be substituted with halogen, methyl or methoxy, non-substituted naphthyl and phenylalkyl constituted from a phenyl group in which optional hydrogens may be substituted with fluorine, alkyl having a carbon atom number of 1 to 4, vinyl or methoxy and an alkylene group having a carbon atom number of 1 to 8 in which optional $-CH_2-$ may be substituted with -O- or -CH=CH-; and when the phenyl or the phenyl group in the phenylalkyl has plural substituents, the substituents may be the same group or different groups.

10. The silicon compound as described in claim 3, wherein all R^1's are the same group selected from ethyl, 3,3,3-trifluoropropyl, 2-methylpropyl, 2,4,4-trimethylpentyl, tridecafluoro-1,1,2,2-

tetrahydrooctyl, cyclopentyl, cyclohexyl and phenyl.

11. The silicon compound as described in claim 3, wherein all R^1's are the same group selected from phenyl and 3,3,3-trifluoropropyl; and R^2 and R^3 are methyl.

12. The silicon compound as described in claim 3, wherein all R^1's are the same group selected from alkyl having a carbon atom number of 1 to 8 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or cycloalkenylene, phenyl in which optional hydrogens may be substituted with halogen, methyl or methoxy, non-substituted naphthyl and phenylalkyl constituted from a phenyl group in which optional hydrogens may be substituted with fluorine, alkyl having a carbon atom number of 1 to 4, vinyl or methoxy and an alkylene group having a carbon atom number of 1 to 8 in which optional $-CH_2-$ may be substituted with -O- or -CH=CH-; when the phenyl or the phenyl group in the phenylalkyl has plural substituents, the substituents may be the same group or different groups; and A is the group represented by Formula (2-1).

13. The silicon compound as described in claim 3, wherein all R^1's are the same group selected from ethyl, 3,3,3-trifluoropropyl, 2-methylpropyl, 2,4,4-trimethylpentyl, tridecafluoro-1,1,2,2-tetrahydrooctyl, cyclopentyl, cyclohexyl and phenyl; A is the group represented by Formula (2-1); Z^2 in Formula (2-1) is Z^3-C_2H_4-; and Z^3 is a single bond or alkylene having a carbon atom number of 1 to 8 in which optional $-CH_2-$ may be substituted with -O-, -COO- or -OCO-.

14. The silicon compound as described in claim 3, wherein all R^1's are the same group selected from phenyl and 3,3,3-trifluoropropyl; R^2 and R^3 are methyl; A is the group represented by Formula (2-1); and in Formula (2-1), Z^1 is $-CH_2-$; Z^2 is $-C_2H_4-$; X is chlorine or bromine; and a is 0.

15. The silicon compound as described in claim 3, wherein all R^1's are the same group selected from alkyl having a carbon atom number of 1 to 8 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or cycloalkenylene, phenyl

in which optional hydrogens may be substituted with halogen, methyl or methoxy, non-substituted naphthyl and phenylalkyl constituted from a phenyl group in which optional hydrogens may be substituted with fluorine, alkyl having a carbon atom number of 1 to 4, vinyl or methoxy and an alkylene group having a carbon atom number of 1 to 8 in which optional $-CH_2-$ may be substituted with -O- or -CH=CH-; when the phenyl or the phenyl group in the phenylalkyl has plural substituents, the substituents may be the same group or different groups; and A is the group represented by Formula (2-2).

16. The silicon compound as described in claim 3, wherein all R^1's are the same group selected from ethyl, 3,3,3-trifluoropropyl, 2-methylpropyl, 2,4,4-trimethylpentyl, tridecafluoro-1,1,2,2-tetrahydrooctyl, cyclopentyl, cyclohexyl and phenyl; A is the group represented by Formula (2-2); and in Formula (2-2), Z^2 is $Z^3-C_2H_4-$, and Z^3 is a single bond or alkylene having a carbon atom number of 1 to 8 in which optional $-CH_2-$ may be substituted with -O-, -COO- or -OCO-.

17. The silicon compound as described in claim 3,

wherein all R^1's are the same group selected from phenyl and 3,3,3-trifluoropropyl; R^2 and R^3 are methyl; A is the group represented by Formula (2-2); and in Formula (2-2), R^4 and R^5 are ethyl; Z^1 is $-CH_2-$; Z^2 is $-C_2H_4-$; and a is 0.

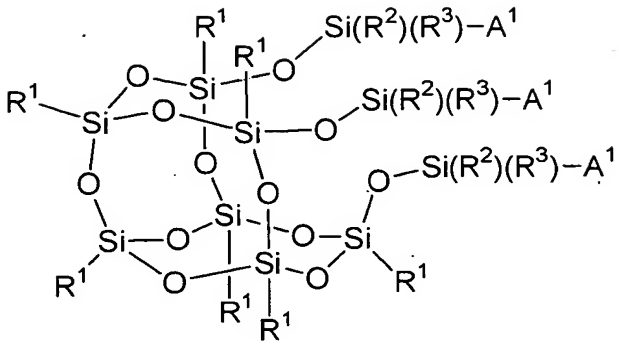
18. The silicon compound as described in claim 3, wherein all R^1's are the same group selected from alkyl having a carbon atom number of 1 to 8 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or cycloalkenylene, phenyl in which optional hydrogens may be substituted with halogen, methyl or methoxy, non-substituted naphthyl and phenylalkyl constituted from a phenyl group in which optional hydrogens may be substituted with fluorine, alkyl having a carbon atom number of 1 to 4, vinyl or methoxy and an alkylene group having a carbon atom number of 1 to 8 in which optional $-CH_2-$ may be substituted with -O- or -CH=CH-; R^2 and R^3 are groups independently selected from alkyl having a carbon atom number of 1 to 8, phenyl and cyclohexyl; and A is the group represented by Formula (2-3).

19. The silicon compound as described in claim 3,

wherein all R^1's are the same group selected from ethyl, 3,3,3-trifluoropropyl, 2-methylpropyl, 2,4,4-trimethylpentyl, tridecafluoro-1,1,2,2-tetrahydrooctyl, cyclopentyl, cyclohexyl and phenyl; A is the group represented by Formula (2-3); and Z^4 in Formula (2-3) is alkylene having a carbon atom number of 2 to 10 in which optional $-CH_2-$ may be substituted with $-O-$.

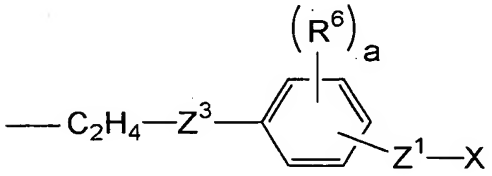
20. The silicon compound as described in claim 3, wherein all R^1's are the same group selected from phenyl and 3,3,3-trifluoropropyl; R^2 and R^3 are methyl; A is the group represented by Formula (2-3); and in Formula (2-3), Z^4 is $-C_2H_4-$, $-C_3H_6-$ or $-C_2H_4-O-C_3H_6-$; R^7 and R^8 are methyl; and X is bromine.

21. A production process for a silicon compound represented by Formula (1-1) characterized by carrying out a step (a) and then a step (b):



(1-1)

wherein respective R^1's are groups independently selected from hydrogen, alkyl having a carbon atom number of 1 to 40 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or cycloalkenylene, substituted or non-substituted aryl and arylalkyl constituted from a substituted or non-substituted aryl group and an alkylene group in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O- or -CH=CH-; R^2 and R^3 are groups independently selected from alkyl having a carbon atom number of 1 to 8, phenyl and cyclohexyl; and A^1 is a group represented by Formula (2-1-1):

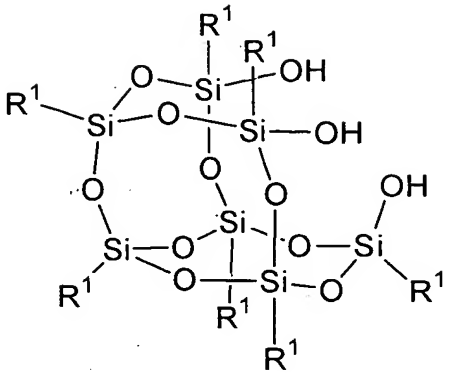


(2-1-1)

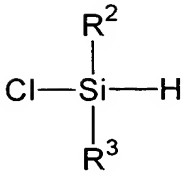
wherein Z^1 is alkylene having a carbon atom number of 1 to 3 in which optional $-CH_2-$ may be substituted with $-O-$; Z^3 is a single bond or alkylene having a carbon atom number of 1 to 8 in which optional $-CH_2-$ may be substituted with $-O-$, $-COO-$ or $-OCO-$; R^6 is alkyl having a carbon atom number of 1 to 3; a is an integer of 0 to 2; X is halogen; and a bonding position of Z^1 on a benzene ring is a meta position or a para position to a bonding position of Z^3, and a bonding position of R^6 is an optional position excluding the respective bonding positions of Z^1 and Z^3;

<step (a)>

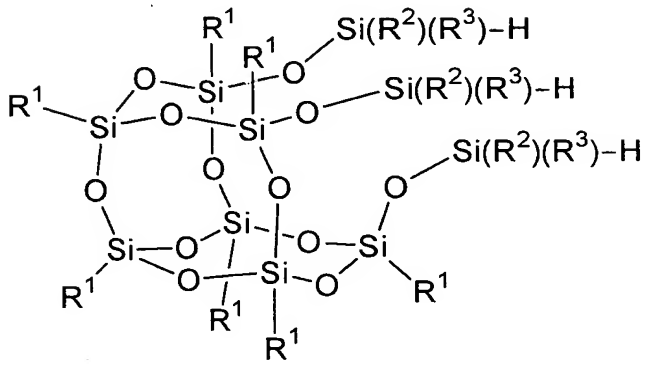
a step in which a compound represented by Formula (3-1) is reacted with a compound represented by Formula (4) to thereby obtain a compound represented by Formula (5):



(3-1)



(4)



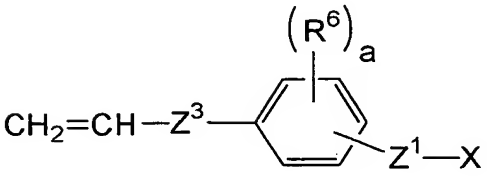
(5)

wherein R^1, R^2 and R^3 in the above formulas have the same meanings as those of these codes in Formula (1-1);

<step (b)>

a step in which the compound represented by Formula (5) is reacted with a compound represented by Formula

(6-1) in the presence of a transition metal catalyst to obtain the silicon compound represented by Formula (1-1):



(6-1)

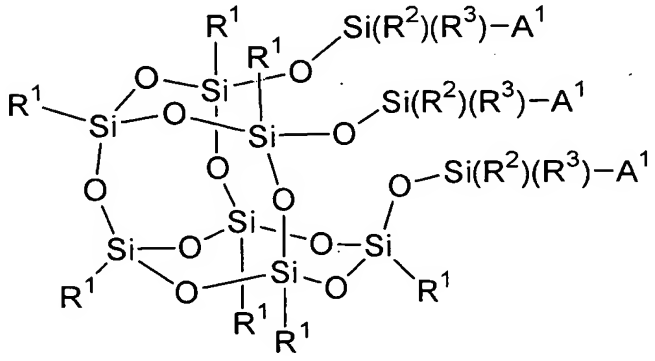
wherein codes in the above formula have the same meanings as those of the respective codes in Formula (2-1-1), and the bonding positions of the substituents are the same as the bonding positions of the substituents in Formula (2-1-1).

22. The production process as described in claim 21, wherein all R^1's are the same group selected from alkyl having a carbon atom number of 1 to 8 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or cycloalkenylene, phenyl in which optional hydrogens may be substituted with halogen, methyl or methoxy, non-substituted naphthyl and phenylalkyl constituted from a phenyl group in which optional hydrogens may be substituted with fluorine, alkyl having a carbon atom number of 1 to 4,

vinyl or methoxy and an alkylene group in which optional $-CH_2-$ may be substituted with $-O-$; and R^2 and R^3 are groups independently selected from alkyl having a carbon atom number of 1 to 8, phenyl and cyclohexyl.

23. The production process as described in claim 21, wherein all R^1's are the same group selected from ethyl, 3,3,3-trifluoropropyl, 2-methylpropyl, 2,4,4-trimethylpentyl, tridecafluoro-1,1,2,2-tetrahydrooctyl, cyclopentyl, cyclohexyl and phenyl; and R^2 and R^3 are methyl.

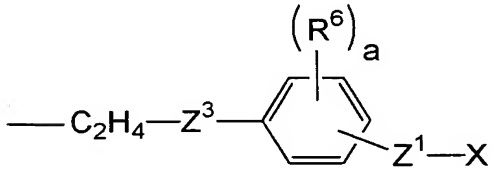
24. A production process for a silicon compound represented by Formula (1-1) characterized by carrying out a step (c) and then a step (b):



(1-1)

wherein respective R^1's are groups independently

selected from hydrogen, alkyl having a carbon atom number of 1 to 40 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with $-O-$, $-CH=CH-$, cycloalkylene or cycloalkenylene, substituted or non-substituted aryl and arylalkyl constituted from a substituted or non-substituted aryl group and an alkylene group in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with $-O-$ or $-CH=CH-$; R^2 and R^3 are groups independently selected from alkyl having a carbon atom number of 1 to 8, phenyl and cyclohexyl; and A^1 is a group represented by Formula (2-1-1):



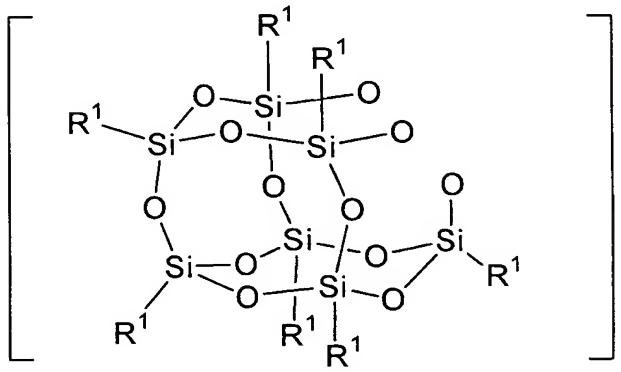
(2-1-1)

wherein Z^1 is alkylene having a carbon atom number of 1 to 3 in which optional $-CH_2-$ may be substituted with $-O-$; Z^3 is a single bond or alkylene having a carbon atom number of 1 to 8 in which optional $-CH_2-$ may be substituted with $-O-$, $-COO-$ or $-OCO-$; R^6 is alkyl having a carbon atom number of 1 to 3; a is an integer of 0 to 2; X is halogen; and a bonding

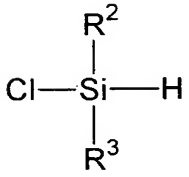
position of Z^1 on a benzene ring is a meta position or a para position to a bonding position of Z^3, and a bonding position of R^6 is an optional position excluding the respective bonding positions of Z^1 and Z^3;

<step (c)>

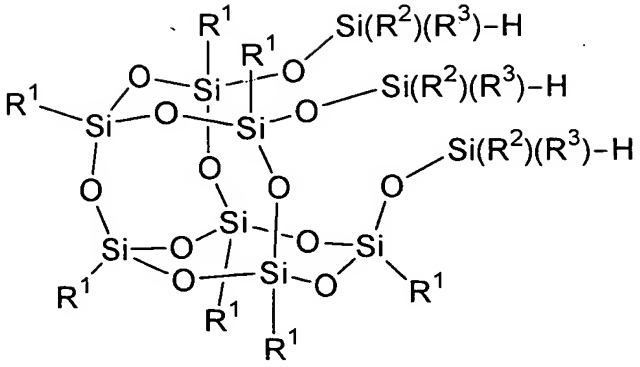
a step in which a compound represented by Formula (3-2) is reacted with a compound represented by Formula (4) to thereby obtain a compound represented by Formula (5):



• 3M (3-2)



(4)

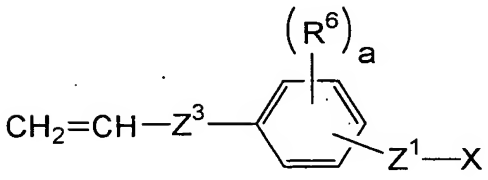


(5)

wherein R^1, R^2 and R^3 in the above formulas have the same meanings as these codes in Formula (1-1), and M is a monovalent alkali metal atom;

<step (b)>

a step in which the compound represented by Formula (5) is reacted with a compound represented by Formula (6-1) in the presence of a transition metal catalyst to obtain the silicon compound represented by Formula (1-1):



(6)

wherein codes in the above formula have the same meanings as those of the respective codes in Formula (2-1-1), and the bonding positions of the

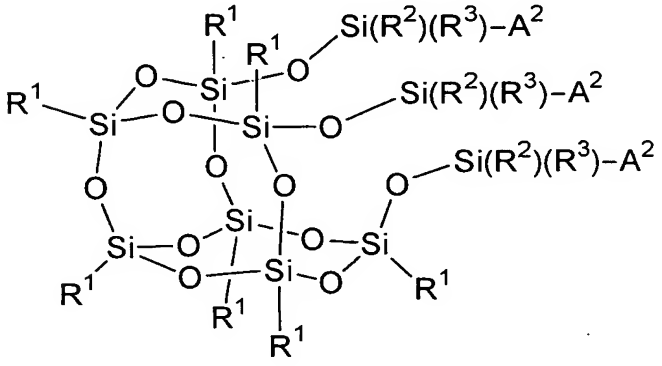
substituents are the same as the bonding positions of the substituents in Formula (2-1-1).

25. The production process as described in claim 24, wherein all R^1's are the same group selected from alkyl having a carbon atom number of 1 to 8 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or cycloalkenylene, phenyl in which optional hydrogens may be substituted with halogen, methyl or methoxy, non-substituted naphthyl and phenylalkyl constituted from a phenyl group in which optional hydrogens may be substituted with fluorine, alkyl having a carbon atom number of 1 to 4, vinyl or methoxy and an alkylene group in which optional $-CH_2-$ may be substituted with -O-; and R^2 and R^3 are groups independently selected from alkyl having a carbon atom number of 1 to 8, phenyl and cyclohexyl.

26. The production process as described in claim 24, wherein all R^1's are the same group selected from ethyl, 3,3,3-trifluoropropyl, 2-methylpropyl, 2,4,4-trimethylpentyl, tridecafluoro-1,1,2,2-tetrahydrooctyl, cyclopentyl, cyclohexyl and phenyl;

and R^2 and R^3 are methyl.

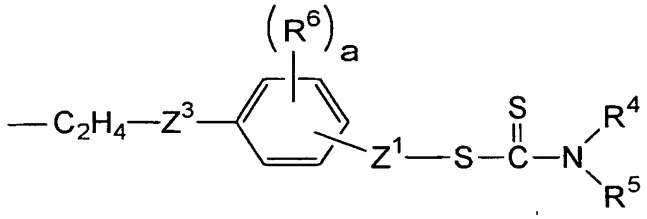
27. A production process for a silicon compound represented by Formula (1-2) characterized by reacting a silicon compound represented by Formula (1-1) with a compound represented by Formula (7):



(1-2)

wherein respective R^1's are groups independently selected from hydrogen, alkyl having a carbon atom number of 1 to 40 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or cycloalkenylene, substituted or non-substituted aryl and arylalkyl constituted from a substituted or non-substituted aryl group and an alkylene group in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be

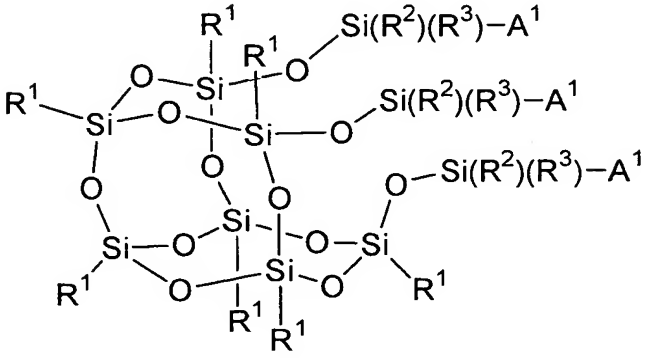
substituted with -O- or -CH=CH-; R^2 and R^3 are groups independently selected from alkyl having a carbon atom number of 1 to 8, phenyl and cyclohexyl; and A^2 is a group represented by Formula (2-2-1):



(2-2-1)

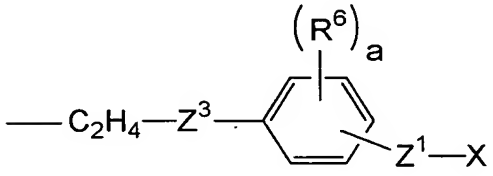
wherein R^4 and R^5 are independently hydrogen, alkyl having a carbon atom number of 1 to 12, cycloalkyl having a carbon atom number of 5 to 10 or aryl having a carbon atom number of 6 to 10, and R^4 and R^5 may be combined with each other to form a ring together with N; Z^1 is alkylene having a carbon atom number of 1 to 3 in which optional $-CH_2-$ may be substituted with -O-; Z^3 is a single bond or alkylene having a carbon atom number of 1 to 8 in which optional $-CH_2-$ may be substituted with -O-, -COO- or -OCO-; R^6 is alkyl having a carbon atom number of 1 to 3; a is an integer of 0 to 2; X is halogen; a bonding position of Z^1 on a benzene ring is a meta position or a para position to a bonding position of Z^3; and a bonding position of R^6 is an optional position excluding the

respective bonding positions of Z^1 and Z^3;



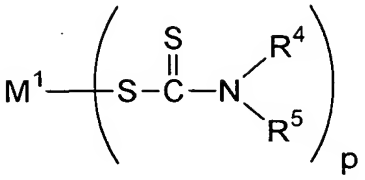
(1-1)

wherein R^1, R^2 and R^3 have the same meanings as these codes in Formula (1-2); and A^1 is a group represented by Formula (2-1-1);



(2-1-1)

wherein Z^1, Z^3, R^6 and a have the same meanings as these codes in Formula (2-2-1); X is halogen; and the bonding positions of Z^1 and R^6 on a benzene ring are the same as these bonding positions in Formula (2-2-1);



(7)

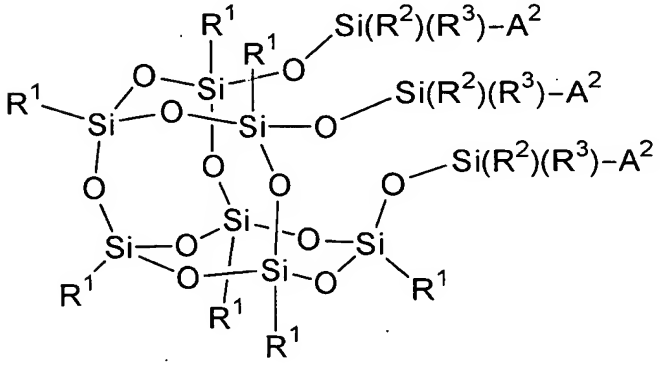
wherein R^4 and R^5 have the same meanings as these codes in Formula (2-2-1); M^1 is a metal element of the first group or the second group in the periodic table; and p is the same value as an atomic value of M^1.

28. The production process as described in claim 27, wherein all R^1's are the same group selected from alkyl having a carbon atom number of 1 to 8 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or cycloalkenylene, phenyl in which optional hydrogens may be substituted with halogen, methyl or methoxy, non-substituted naphthyl and phenylalkyl constituted from a phenyl group in which optional hydrogens may be substituted with fluorine, alkyl having a carbon atom number of 1 to 4, vinyl or methoxy and an alkylene group in which optional $-CH_2-$ may be substituted with -O-; and R^2 and R^3 are groups independently selected from alkyl

having a carbon atom number of 1 to 8, phenyl and cyclohexyl.

29. The production process as described in claim 27, wherein all R^1's are the same group selected from ethyl, 3,3,3-trifluoropropyl, 2-methylpropyl, 2,4,4-trimethylpentyl, tridecafluoro-1,1,2,2-tetrahydrooctyl, cyclopentyl, cyclohexyl and phenyl; and R^2 and R^3 are methyl.

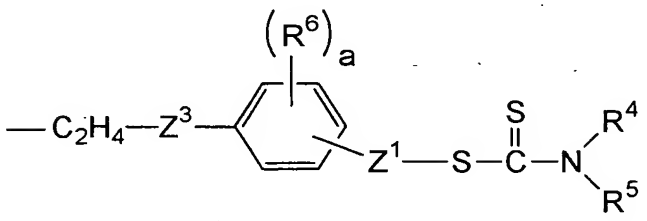
30. A production process for a silicon compound represented by Formula (1-2) characterized by obtaining a compound represented by Formula (5) by a step (a) or a step (c) and carrying out a step (d) and then a step (e):



(1-2)

wherein respective R^1's are groups independently

selected from hydrogen, alkyl having a carbon atom number of 1 to 40 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or cycloalkenylene, substituted or non-substituted aryl and arylalkyl constituted from a substituted or non-substituted aryl group and an alkylene group in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O- or -CH=CH-; R^2 and R^3 are groups independently selected from alkyl having a carbon atom number of 1 to 8, phenyl and cyclohexyl; and A^2 is a group represented by Formula (2-2-1):



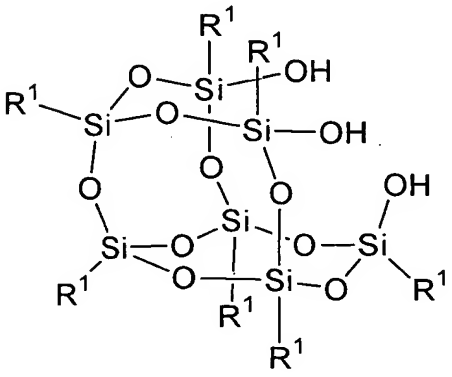
(2-2-1)

wherein Z^1 is alkylene having a carbon atom number of 1 to 3 in which optional $-CH_2-$ may be substituted with -O-; Z^3 is a single bond or alkylene having a carbon atom number of 1 to 8 in which optional $-CH_2-$ may be substituted with -O-, -COO- or -OCO-; R^4 and R^5 are independently hydrogen, alkyl having a carbon

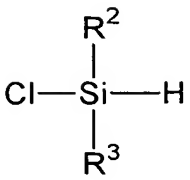
atom number of 1 to 12, cycloalkyl having a carbon atom number of 5 to 10 or aryl having a carbon atom number of 6 to 10, and R^4 and R^5 may be combined with each other to form a ring together with N; R^6 is alkyl having a carbon atom number of 1 to 3; a is an integer of 0 to 2; and a bonding position of Z^1 on a benzene ring is a meta position or a para position to a bonding position of Z^3, and a bonding position of R^6 is an optional position excluding the respective bonding positions of Z^1 and Z^3;

<step (a)>

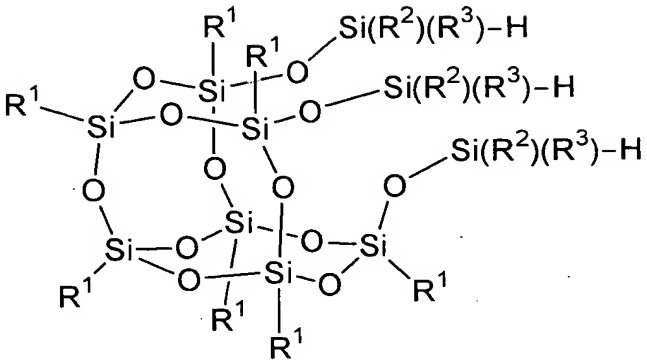
a step in which a compound represented by Formula (3-1) is reacted with a compound represented by Formula (4) to thereby obtain a compound represented by Formula (5):



(3-1)



(4)

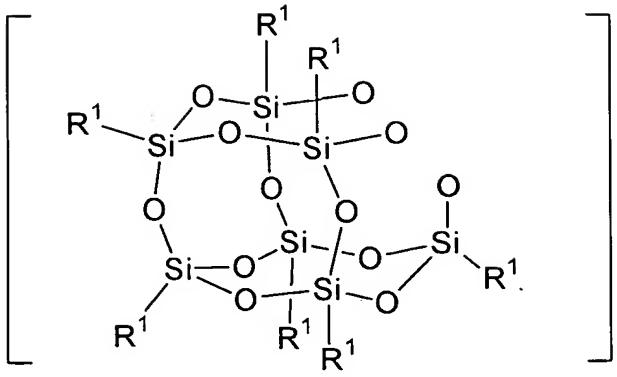


(5)

wherein R^1, R^2 and R^3 in the above formulas have the same meanings as these codes in Formula (1-2);

<step (c)>

a step in which a compound represented by Formula (3-2) is reacted with the compound represented by Formula (4) to thereby obtain the compound represented by Formula (5):

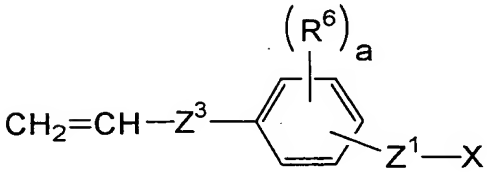


・3M (3-2)

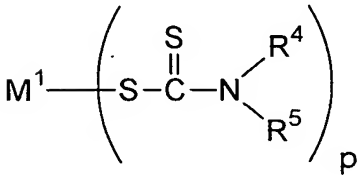
wherein R^1 has the same meaning as that of R^1 in Formula (1-2); and M is a monovalent alkali metal atom;

<step (d)>

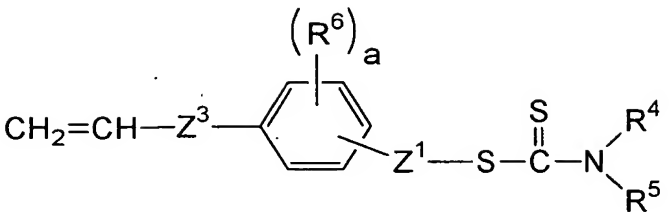
a step in which a compound represented by Formula (6-1) is reacted with a compound represented by Formula (7) to obtain a compound represented by Formula (6-2):



(6-1)



(7)



(6-2)

wherein Z^1, Z^3, R^6, a, R^4 and R^5 in the above formulas have the same meanings as these codes in Formula (2-2-1); the bonding positions of Z^1 and R^6 on a benzene ring are the same as these bonding positions in Formula (2-2-1); X is halogen; M^1 is a metal element of the first group or the second group in the periodic table; and p is the same value as an atomic value of M^1;

<step (e)>

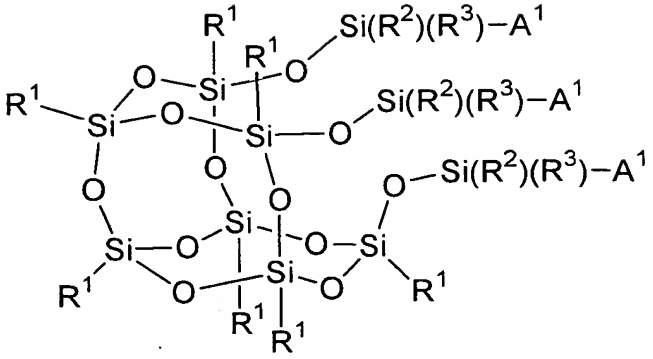
a step in which the compound represented by Formula (5) is reacted with the compound represented by Formula (6-2) in the presence of a transition metal catalyst to obtain the silicon compound represented by Formula (1-2).

31. The production process as described in claim 30, wherein all R^1's are the same group selected from alkyl having a carbon atom number of 1 to 8 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -

O-, -CH=CH-, cycloalkylene or cycloalkenylene, phenyl in which optional hydrogens may be substituted with halogen, methyl or methoxy, non-substituted naphthyl and phenylalkyl constituted from a phenyl group in which optional hydrogens may be substituted with fluorine, alkyl having a carbon atom number of 1 to 4, vinyl or methoxy and an alkylene group in which optional $-CH_2-$ may be substituted with -O-; and R^2 and R^3 are groups independently selected from alkyl having a carbon atom number of 1 to 8, phenyl and cyclohexyl.

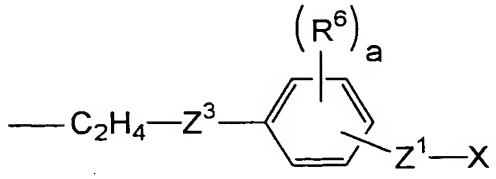
32. The production process as described in claim 30, wherein all R^1's are the same group selected from ethyl, 3,3,3-trifluoropropyl, 2-methylpropyl, 2,4,4-trimethylpentyl, tridecafluoro-1,1,2,2-tetrahydrooctyl, cyclopentyl, cyclohexyl and phenyl; and R^2 and R^3 are methyl.

33. A production process for a silicon compound represented by Formula (1-1) characterized by carrying out a step (f) and then a step (g):



(1-1)

wherein respective R^1's are groups independently selected from hydrogen, alkyl having a carbon atom number of 1 to 40 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or cycloalkenylene, substituted or non-substituted aryl and arylalkyl constituted from a substituted or non-substituted aryl group and an alkylene group in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O- or -CH=CH-; R^2 and R^3 are groups independently selected from alkyl having a carbon atom number of 1 to 8, phenyl and cyclohexyl; and A^1 is a group represented by Formula (2-1-1):

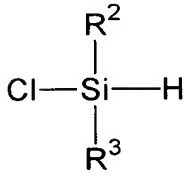


(2-1-1)

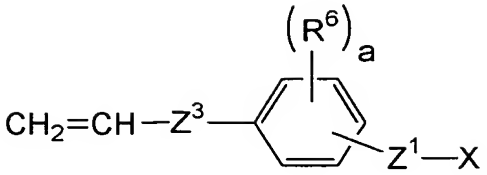
wherein Z^1 is alkylene having a carbon atom number of 1 to 3 in which optional $-CH_2-$ may be substituted with $-O-$; Z^3 is a single bond or alkylene having a carbon atom number of 1 to 8 in which optional $-CH_2-$ may be substituted with $-O-$, $-COO-$ or $-OCO-$; R^6 is alkyl having a carbon atom number of 1 to 3; a is an integer of 0 to 2; X is halogen; and a bonding position of Z^1 on a benzene ring is a meta position or a para position to a bonding position of Z^3, and a bonding position of R^6 is an optional position excluding the respective bonding positions of Z^1 and Z^3;

<step (f)>

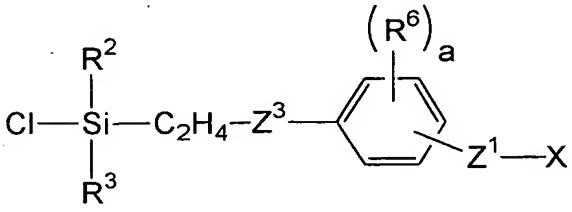
a step in which a compound represented by Formula (4) is reacted with a compound represented by Formula (6-1) in the presence of a transition metal catalyst to obtain a compound represented by Formula (8-1):



(4)



(6-1)

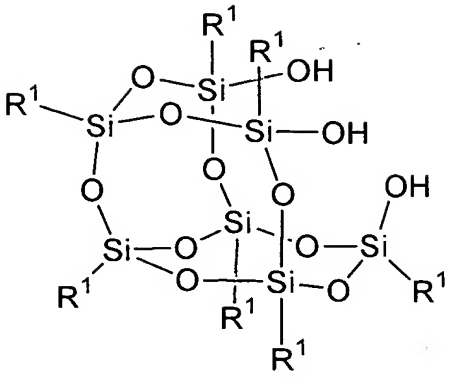


(8-1)

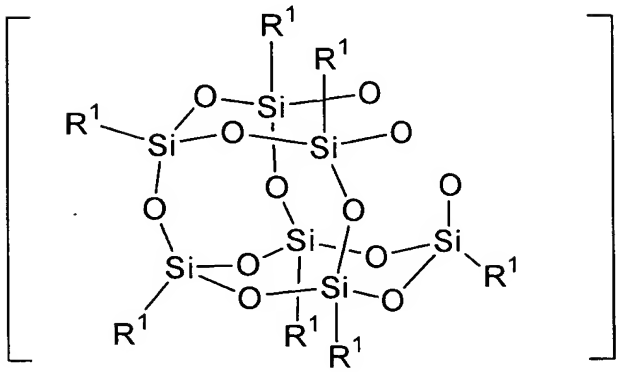
wherein in the above formulas, ^{1}, R^2 and R^3 have the same meanings as these codes in Formula (1-1); Z^1, Z^3, R^6 and a have the same meanings as these codes in Formula (2-1-1); the bonding positions of Z^1 and R^6 on a benzene ring are the same as these bonding positions in Formula (2-1-1); and X is halogen;

<step (g)>

a step in which the compound represented by Formula (8-1) is reacted with a compound represented by Formula (3-1) or a compound represented by Formula (3-2) to obtain the compound represented by Formula (1-1):



(3-1)



(3-2)

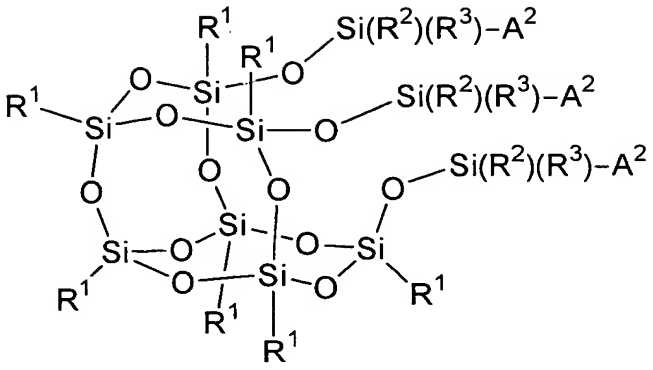
wherein in the above formulas, R^1 has the same meaning as that of R^1 in Formula (1-1); and M is a monovalent alkali metal atom.

34. The production process as described in claim 33, wherein all R^1's are the same group selected from alkyl having a carbon atom number of 1 to 8 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or cycloalkenylene, phenyl

in which optional hydrogens may be substituted with halogen, methyl or methoxy, non-substituted naphthyl and phenylalkyl constituted from a phenyl group in which optional hydrogens may be substituted with fluorine, alkyl having a carbon atom number of 1 to 4, vinyl or methoxy and an alkylene group in which optional $-CH_2-$ may be substituted with $-O-$; and R^2 and R^3 are groups independently selected from alkyl having a carbon atom number of 1 to 8, phenyl and cyclohexyl.

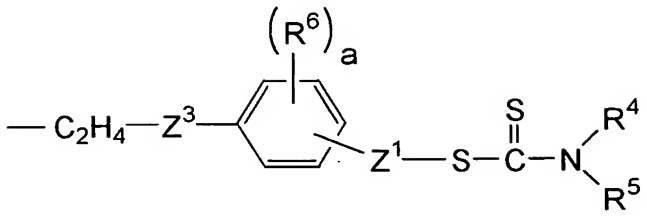
35. The production process as described in claim 33, wherein all R^1's are the same group selected from ethyl, 3,3,3-trifluoropropyl, 2-methylpropyl, 2,4,4-trimethylpentyl, tridecafluoro-1,1,2,2-tetrahydrooctyl, cyclopentyl, cyclohexyl and phenyl; and R^2 and R^3 are methyl.

36. A production process for a silicon compound represented by Formula (1-2) characterized by obtaining a compound represented by Formula (6-2) by a step (d) and carrying out a step (h) and then a step (i):



(1-2)

wherein respective R^1's are groups independently selected from hydrogen, alkyl having a carbon atom number of 1 to 40 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or cycloalkenylene, substituted or non-substituted aryl and arylalkyl constituted from a substituted or non-substituted aryl group and an alkylene group in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O- or -CH=CH-; R^2 and R^3 are groups independently selected from alkyl having a carbon atom number of 1 to 8, phenyl and cyclohexyl; and A^2 is a group represented by Formula (2-2-1):



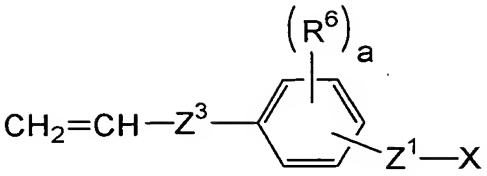
(2-2-1)

wherein Z^1 is alkylene having a carbon atom number of 1 to 3 in which optional $-CH_2-$ may be substituted with $-O-$; Z^3 is a single bond or alkylene having a carbon atom number of 1 to 8 in which optional $-CH_2-$ may be substituted with $-O-$, $-COO-$ or $-OCO-$; R^4 and R^5 are independently hydrogen, alkyl having a carbon atom number of 1 to 12, cycloalkyl having a carbon atom number of 5 to 10 or aryl having a carbon atom number of 6 to 10, and R^4 and R^5 may be combined with each other to form a ring together with N; R^6 is alkyl having a carbon atom number of 1 to 3; a is an integer of 0 to 2; and a bonding position of Z^1 on a benzene ring is a meta position or a para position to a bonding position of Z^3, and a bonding position of R^6 is an optional position excluding the respective bonding positions of Z^1 and Z^3;

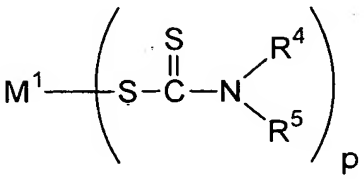
<step (d)>

a step in which a compound represented by Formula (6-1) is reacted with a compound represented by Formula (7) to obtain a compound represented by Formula (6-

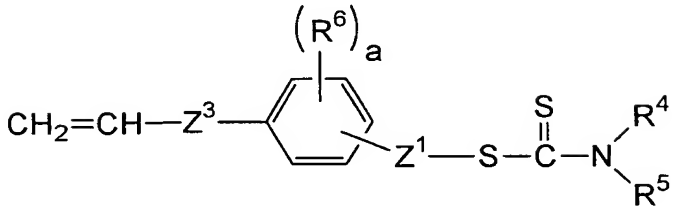
2):



(6-1)



(7)



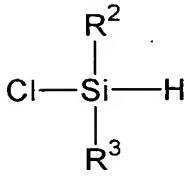
(6-2)

wherein Z^1, Z^3, R^6, a, R^4 and R^5 in the above formulas have the same meanings as these codes in Formula (2-2-1); the bonding positions of Z^1 and R^6 on a benzene ring are the same as these bonding positions in Formula (2-2-1); X is halogen; M^1 is a metal element of the first group or the second group in the periodic table; and p is the same value as an atomic value of M^1;

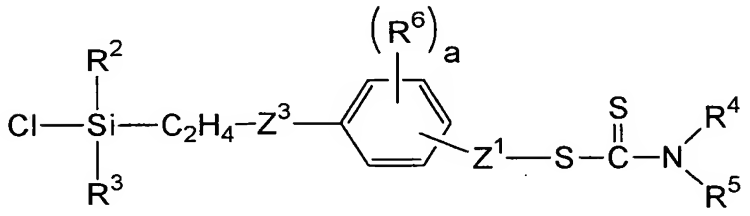
<step (h)>

a step in which the compound represented by Formula

(6-2) is reacted with a compound represented by Formula (4) in the presence of a transition metal catalyst to obtain a silicon compound represented by Formula (8-2);



(4)



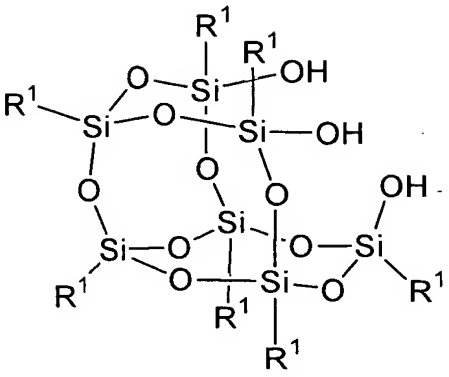
(8-2)

wherein R^2 and R^3 in the above formulas have the same meanings as these codes in Formula (1-2); the other codes have the same meanings as these codes in Formula (2-2-1); and the bonding positions of Z^1 and R^6 on a benzene ring are the same as these bonding positions in Formula (2-2-1);

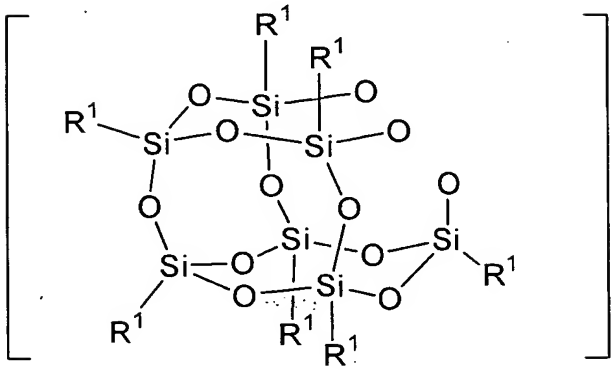
<step (i)>

a step in which the compound represented by Formula (8-2) is reacted with a compound represented by Formula (3-1) or a compound represented by Formula (3-2) to thereby obtain the compound represented by

Formula (1-2):



(3-1)



• 3M (3-2)

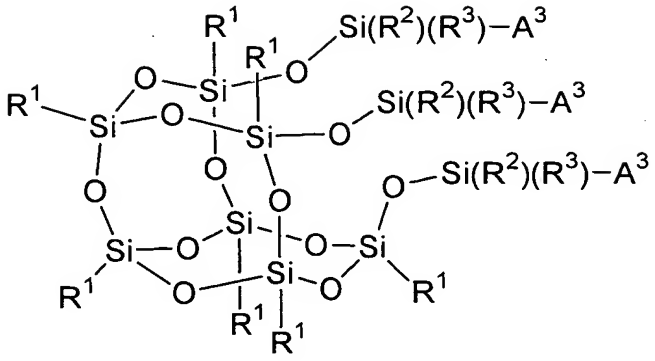
wherein in the above formulas, R^1 has the same meaning as that of R^1 in Formula (1-2); and M is a monovalent alkali metal atom.

37. The production process as described in claim 36, wherein all R^1's are the same group selected from alkyl having a carbon atom number of 1 to 8 in which optional hydrogens may be substituted with fluorine

and in which optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or cycloalkenylene, phenyl in which optional hydrogens may be substituted with halogen, methyl or methoxy, non-substituted naphthyl and phenylalkyl constituted from a phenyl group in which optional hydrogens may be substituted with fluorine, alkyl having a carbon atom number of 1 to 4, vinyl or methoxy and an alkylene group in which optional $-CH_2-$ may be substituted with -O-; and R^2 and R^3 are groups independently selected from alkyl having a carbon atom number of 1 to 8, phenyl and cyclohexyl.

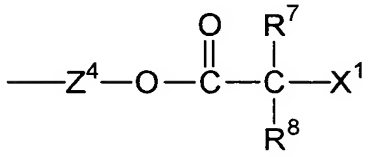
38. The production process as described in claim 36, wherein all R^1's are the same group selected from ethyl, 3,3,3-trifluoropropyl, 2-methylpropyl, 2,4,4-trimethylpentyl, tridecafluoro-1,1,2,2-tetrahydrooctyl, cyclopentyl, cyclohexyl and phenyl; and R^2 and R^3 are methyl.

39. A production process for a silicon compound represented by Formula (1-3) characterized by reacting a compound represented by Formula (9) with a compound represented by Formula (10):



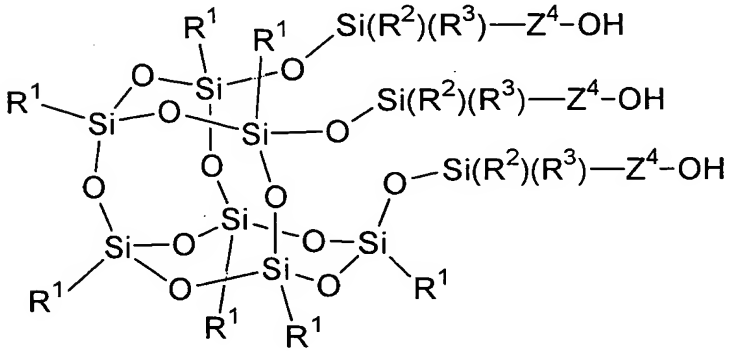
(1-3)

wherein respective R^1's are groups independently selected from hydrogen, alkyl having a carbon atom number of 1 to 40 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or cycloalkenylene, substituted or non-substituted aryl and arylalkyl constituted from a substituted or non-substituted aryl group and an alkylene group in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O- or -CH=CH-; R^2 and R^3 are groups independently selected from alkyl having a carbon atom number of 1 to 8, phenyl and cyclohexyl; and A^3 is a group represented by Formula (2-3):

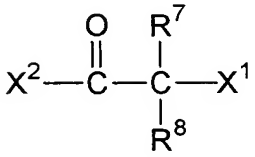


(2-3)

wherein Z^4 is alkylene having a carbon atom number of 2 to 20 or alkenylene having a carbon atom number of 3 to 8, and optional $-CH_2-$ in these alkylene and alkenylene may be substituted with -O-; R^7 is hydrogen, alkyl having a carbon atom number of 1 to 20, aryl having a carbon atom number of 6 to 20 or arylalkyl having a carbon atom number of 7 to 20; R^8 is alkyl having a carbon atom number of 1 to 20, aryl having a carbon atom number of 6 to 20 or arylalkyl having a carbon atom number of 7 to 20; and X^1 is halogen;



(9)



(10)

wherein R^1, R^2, R^3 and Z^4 in Formula (9) have the same

meanings as these codes in Formula (1-3); in Formula (10), R^7, R^8 and X^1 have the same meanings as these codes in Formula (2-3); and X^2 is halogen.

40. The production process as described in claim 39, wherein all R^1's are the same group selected from alkyl having a carbon atom number of 1 to 8 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or cycloalkenylene, phenyl in which optional hydrogens may be substituted with halogen, methyl or methoxy, non-substituted naphthyl and phenylalkyl constituted from a phenyl group in which optional hydrogens may be substituted with fluorine, alkyl having a carbon atom number of 1 to 4, vinyl or methoxy and an alkylene group in which optional $-CH_2-$ may be substituted with -O-; and R^2 and R^3 are groups independently selected from alkyl having a carbon atom number of 1 to 8, phenyl and cyclohexyl.

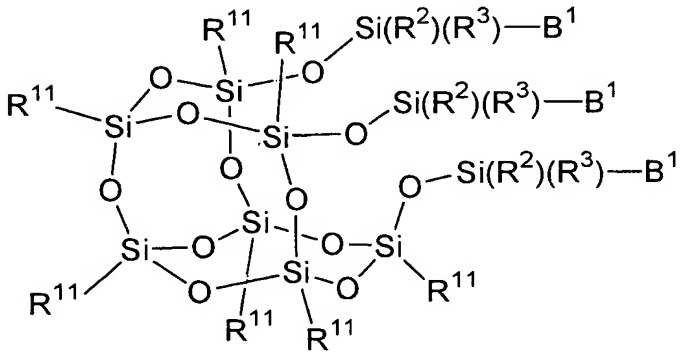
41. The production process as described in claim 39, wherein all R^1's are the same group selected from ethyl, 3,3,3-trifluoropropyl, 2-methylpropyl, 2,4,4-trimethylpentyl, tridecafluoro-1,1,2,2-

tetrahydrooctyl, cyclopentyl, cyclohexyl and phenyl; and R^2 and R^3 are methyl.

42. A polymer obtained by polymerizing an addition-polymerizable monomer using the silicon compound as described in claim 1 as an initiator and using a transition metal complex as a catalyst.

43. A polymer obtained by polymerizing an addition-polymerizable monomer using the silicon compound as described in claim 3 as an initiator and using a transition metal complex as a catalyst.

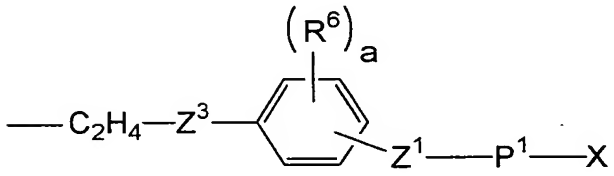
44. A polymer represented by Formula (P-1):



(P-1)

wherein all R^{11}'s are the same group selected from alkyl having a carbon atom number of 1 to 8 in which optional hydrogens may be substituted with fluorine

and in which optional $-CH_2-$ may be substituted with $-O-$, $-CH=CH-$, cycloalkylene or cycloalkenylene, phenyl in which optional hydrogens may be substituted with halogen, methyl or methoxy, non-substituted naphthyl and phenylalkyl constituted from a phenyl group in which optional hydrogens may be substituted with fluorine, alkyl having a carbon atom number of 1 to 4, vinyl or methoxy and an alkylene group in which optional $-CH_2-$ may be substituted with $-O-$; R^2 and R^3 are groups independently selected from alkyl having a carbon atom number of 1 to 8, phenyl and cyclohexyl; and B^1 is a group represented by Formula (2-1-P):

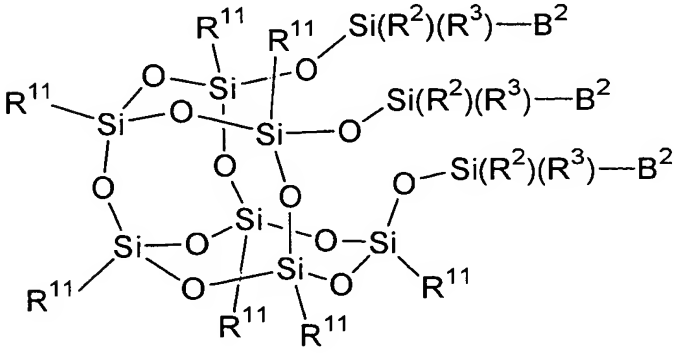


(2-1-P)

wherein Z^1 is alkylene having a carbon atom number of 1 to 3 in which optional $-CH_2-$ may be substituted with $-O-$; Z^3 is a single bond or alkylene having a carbon atom number of 1 to 8 in which optional $-CH_2-$ may be substituted with $-O-$, $-COO-$ or $-OCO-$; R^6 is alkyl having a carbon atom number of 1 to 3; a is an integer of 0 to 2; X is halogen; a bonding position of Z^1 on a benzene ring is a meta position or a para

position to a bonding position of Z^3, and a bonding position of R^6 is an optional position excluding the respective bonding positions of Z^1 and Z^3; and P^1 is a chain of a structural unit obtained by polymerizing an addition-polymerizable monomer.

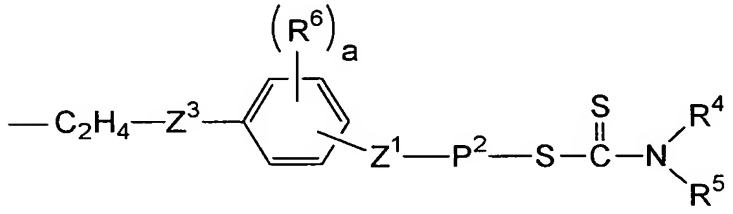
45. A polymer represented by Formula (P-2):



(P-2)

wherein all R^{11}'s are the same group selected from alkyl having a carbon atom number of 1 to 8 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or cycloalkenylene, phenyl in which optional hydrogens may be substituted with halogen, methyl or methoxy, non-substituted naphthyl and phenylalkyl constituted from a phenyl group in which optional hydrogens may be substituted with fluorine, alkyl having a carbon atom number of 1 to 4,

vinyl or methoxy and an alkylene group in which optional $-CH_2-$ may be substituted with $-O-$; R^2 and R^3 are groups independently selected from alkyl having a carbon atom number of 1 to 8, phenyl and cyclohexyl; and B^2 is a group represented by Formula (2-2-P):

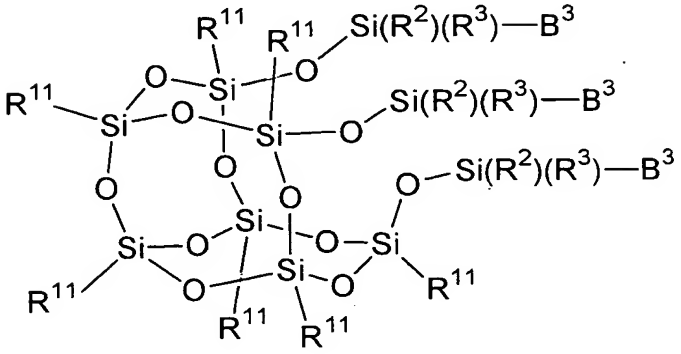


(2-2-P)

wherein Z^1 is alkylene having a carbon atom number of 1 to 3 in which optional $-CH_2-$ may be substituted with $-O-$; Z^3 is a single bond or alkylene having a carbon atom number of 1 to 8 in which optional $-CH_2-$ may be substituted with $-O-$, $-COO-$ or $-OCO-$; R^4 and R^5 are independently hydrogen, alkyl having a carbon atom number of 1 to 12, cycloalkyl having a carbon atom number of 5 to 10 or aryl having a carbon atom number of 6 to 10, and R^4 and R^5 may be combined with each other to form a ring together with N; R^6 is alkyl having a carbon atom number of 1 to 3; a is an integer of 0 to 2; a bonding position of Z^1 on a benzene ring is a meta position or a para position to a bonding position of Z^3, and a bonding position of R^6 is an optional position excluding the respective

bonding positions of Z^1 and Z^3; and P^2 is a chain of a structural unit obtained by polymerizing an addition-polymerizable monomer.

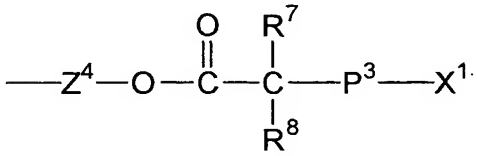
46. A polymer represented by Formula (P-3):



(P-3)

wherein all R^{11}'s are the same group selected from alkyl having a carbon atom number of 1 to 8 in which optional hydrogens may be substituted with fluorine and in which optional $-CH_2-$ may be substituted with -O-, -CH=CH-, cycloalkylene or cycloalkenylene, phenyl in which optional hydrogens may be substituted with halogen, methyl or methoxy, non-substituted naphthyl and phenylalkyl constituted from a phenyl group in which optional hydrogens may be substituted with fluorine, alkyl having a carbon atom number of 1 to 4, vinyl or methoxy and an alkylene group in which optional $-CH_2-$ may be substituted with -O-; R^2 and R^3

are groups independently selected from alkyl having a carbon atom number of 1 to 8, phenyl and cyclohexyl; and B^3 is a group represented by Formula (2-3-P):



(2-3-P)

wherein Z^4 is alkylene having a carbon atom number of 2 to 20 or alkenylene having a carbon atom number of 3 to 8, and optional $-CH_2-$ in these alkylene and alkenylene may be substituted with $-O-$; R^7 is hydrogen, alkyl having a carbon atom number of 1 to 20, aryl having a carbon atom number of 6 to 20 or arylalkyl having a carbon atom number of 7 to 20; R^8 is alkyl having a carbon atom number of 1 to 20, aryl having a carbon atom number of 6 to 20 or arylalkyl having a carbon atom number of 7 to 20; X^1 is halogen; and P^3 is a chain of a structural unit obtained by polymerizing an addition-polymerizable monomer.

47. The polymer as described in claim 44, wherein the addition-polymerizable monomer is at least one selected from the group of (meth)acrylic acid

derivatives and the group of styrene derivatives.

48. The polymer as described in claim 45, wherein the addition-polymerizable monomer is at least one selected from the group of (meth)acrylic acid derivatives and the group of styrene derivatives.

49. The polymer as described in claim 46, wherein the addition-polymerizable monomer is at least one selected from the group of (meth)acrylic acid derivatives and the group of styrene derivatives.